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10/762,828	01/21/2004	Lars Bak	188224/US/3	6090

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DENVER, CO 80202

EXAMINER

NGUYEN, PHILLIP H

ART UNIT	PAPER NUMBER
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2191

MAIL DATE	DELIVERY MODE
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12/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/762,828

Applicant(s)

BAK ET AL.

Examiner

Phillip H. Nguyen

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-19 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 6 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the amendment filed 10/05/2007.
2. Claims 1-23 remain pending have been considered below.

Response to Amendment

3. The rejection to claims 1-23 under Obviousness-type Double Patenting of previous action is withdrawn in view of the terminal disclaimer has been filed and approved.
4. The rejection to claims 15-22 under 35 U.S.C. 101 of previous action is NOT withdrawn in view of Applicants' amendment in an attempted to overcome the rejection.
5. The rejection to claims 2, 3, 7-9, 13, 14, 16 and 17 under 35 U.S.C. 112, second paragraph of previous action is withdrawn in view of Applicants' amendment to clarify the identified discrepancy.
6. The rejection to claims 1-23 under 35 U.S.C. 103(a) of previous action is withdrawn in view of Applicants' amendment.

Response to Arguments

7. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Although, the "a data signal embodied in a carrier wave..." has been deleted in the specification in an attempted to overcome the rejection. However, claim 21 still claims "a data signal embodied in a carrier wave". Therefore, examiner maintains the rejection.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-5, 7-19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dean et al. "Optimization of Object-oriented Program Using Static Class Hierarchy Analysis, August 1995, ECOOP 95 – Object-oriented Programming, 9th European Conference", in view of Bentley et al. (United States Patent No.: US 6,063,128).

As per claims 1, 12, 15, 22 and 23, Dean teaches:

- *compiling the function* (see at least Introduction, 3rd paragraph);

- *identifying a call to a process, the call to the process being included in the function (see at least Introduction, 3rd paragraph); and*

Dean does not explicitly teach

- *adding dependency information of the function at runtime, wherein the dependency information is arranged to indicate a status of the function, the dependency information including class information, name information, and signature information associated with the process, wherein the status of the function is arranged to indicate a validity of the function and a compilation status of the function.*

However, Bentley teaches the runtime interaction between dependent objects (see at least FIG. 8 and col. 16, lines 20-66; col. 17, lines 1-67; col. 18, lines 1-53) so that his computerized modeling system (CMS) can ensure proper coordination and state consistency of objects at all times between a plurality of simultaneous users (col. 2, lines 55-58).

It would have been obvious to one having an ordinary skill in the art at the time the invention was made to combine Bentley with Dean by using Bentley's approach of checking the dependency information of function at runtime to ensure proper coordination and state consistency of objects in a multi-user environment.

As per claim 2, 13 and 16, Dean further teaches:

- *analyzing a class structure associated with the function, wherein analyzing the class structure includes determining when the virtual process is a unique target*

of the call (see at least section 2.1, 1st paragraph, lines 3-5; page 81, 3rd paragraph, i.e. "A function...").

As per claims 3, 14 and 17, Dean further teaches:

- *inlining the virtual process into the function when it is determined that the virtual process is the unique target of the call (see at least page 78, 2nd paragraph).*

As per claims 4 and 18, Dean further teaches:

- *placing a direct call to the virtual process in the function (see at least section 2.1, 1st paragraph, lines 3-5).*

As per claims 5 and 19, Dean further teaches:

- *determining when the function is suitable for compilation (see at least page 89, 2nd paragraph, using filtering nodes).*

As per claim 7, Dean further teaches:

- *determining when the function is not a unique caller to the process (see at least page 89, 2nd paragraph); and*
- *de-compiling the function when is determined that the function is not a unique caller to the process (see at least page 89, 2nd paragraph).*

As per claim 8, Dean further teaches:

- *determining when the function is not a unique caller to the process (see at least page 89, 2nd paragraph); and*
- *re-compiling the function when is determined that the function is not a unique caller to the process (see at least page 89, 2nd paragraph).*

As per claim 9, Dean further teaches:

- *marking the first class (see at least the Figure on page 84, class A::m and related discussion in the document);*
- *marking a second class, the second class being included in the class hierarchy, the second class further being associated with the first class, wherein marking the second class substantially identifies the second class as being associated with the first class (see at least the Figure on page 84, C::m and related discussion in the document);*
- *inspecting a compiled function associated with the system, the compiled function including dependency information, the dependency information being arranged to indicate a validity status of the compiled function and the optimization status of the compiled function, wherein inspecting the compiled function includes determining when at least one of the first class and the second class is identified in the dependency information (see at least section 2.2.2, Method Applies To Sets); and*

- *determining when the compiled function is invalid when it is determined that at least one of the first class and the second class is identified in the dependency information (see at least section 2.2.2, Method Applies To Sets).*

Dean does not explicitly teach during runtime. However Bentley teaches the runtime interaction between dependent objects (see at least FIG. 8 and col. 16, lines 20-66; col. 17, lines 1-67; col. 18, lines 1-53) so that his computerized modeling system (CMS) can ensure proper coordination and state consistency of objects at all times between a plurality of simultaneous users (see col. 2, lines 55-58).

It would have been obvious to one having an ordinary skill in the art at the time the invention was made to combine Bentley with Dean by using Bentley's approach of checking the dependency information of function at run-time in Dean's approach to ensure proper coordination and state consistency of objects in a multi-user environment.

As per claim 10, Dean further teaches:

- *de-compiling the compiled function when it is determined that the compiled function is invalid, wherein de-compiling the compiled function effectively places the compiled function in an interpreted form (see at least page 89, 2nd and 3rd paragraph).*

As per claim 11, Dean further teaches:

- *re-compiling the compiled function when it is determined that the compiled function is invalid, wherein re-compiling the compiled function allows the compiled function to account for the first class (see at least page 89, 2nd and 3rd paragraph).*

As per claim 21, Bentley further teaches:

- *wherein the computer-readable medium is one selected from the group consisting of a floppy disk, a hard disk, a tape, a data signal embodied in a carrier wave, a CD-ROM, a system memory, and a flash memory (see at least col. 7, lines 64-67).*

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip H. Nguyen whose telephone number is (571) 270-1070. The examiner can normally be reached on Monday - Thursday 10:00 AM - 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PN
12/18/2007



WEI ZHEN
SUPERVISORY PATENT EXAMINER